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Synthesis and Antimicrobial Test of Heterocyclic Chalcone Containing Oxygen

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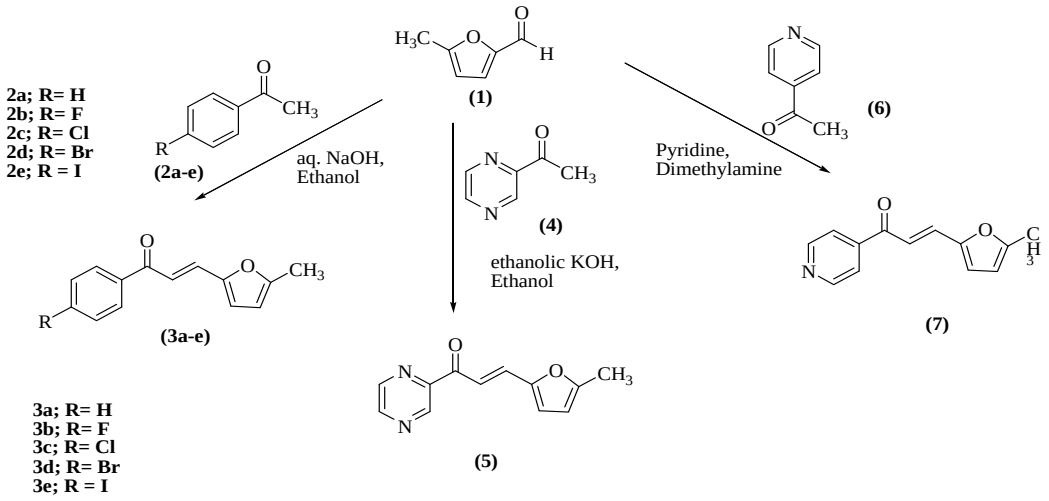
Chalcones (1,3-diaryl-2-propen-1-ones) which are belonging to flavanoid family is one of the classes of compounds which possess a wide range of biological activities such as antibacterial, anticancer, antifungal agents and others[1]. It was reported that heterocyclic chalcone bearing heterocycles such as furan ring has also significant property acting as antibacterial and antifungal agent[2]. Due to this potential, a series of heterocyclic chalcones were synthesized by focusing on varying the aromatic ketone containing halogen groups as these groups as reported to have significant activities towards selected bacterial strains. The reaction between 5-methylfurfural **(1)** with aromatic ketone **(2a-e, 4 and 6)** have successfully furnished products in high yields by conventional Claisen-Schmidt condensation method in the presence of base at room temperature **(Scheme 1)**. The structures of the compounds were confirmed by spectroscopic method such as infrared spectroscopy (IR), nuclear magnetic resonance (^{1}H and ^{13}C NMR) and mass spectrometer (MS). All the synthesized compounds were screened for their antibacterial and antifungal activities.



Scheme 1 Synthesis route for preparation of chalcone derivative

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